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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
	)	
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs	)	CC Docket No. 97-160
	)	

COMMENTS OF GTE SERVICE CORPORATION

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SUMMARY

In this phase of the cost model proceeding, the Commission has asked for comment on the input values that should be used in the model for determining universal service costs. As GTE has explained in its prior pleadings, an auction mechanism is the best method for allocating universal service funding. Competitive bidding will allow all carriers the opportunity to provide universal service using any technologies while also ensuring that the carrier selected will provide the most cost-effective service. Until such a mechanism can be put in place, the Commission should use carrier-specific, state-approved engineering models. Carrier-specific models will allow individual characteristics of different companies and regions to be taken into account in computing the costs of providing service.

If the Commission decides instead to use a cost proxy model, the model should include as many user-adjustable inputs as possible. User-adjustable variables will allow carriers to provide model inputs which reflect the costs of doing business in different areas of the United States. In particular, such variables will ensure that differences such as climate, terrain, and population density are considered. However, in order for these inputs to be effective, the variables must be clearly defined, and the model must be structured so that changes in the variables have a significant impact on model results.

As explained below, the Commission must allow use of actual data for such variables such as plant mix, material and installation costs, switching costs, and interoffice facilities. In addition, it is critical that depreciation expense be calculated on

the useful economic life of equipment so that actual forward-looking costs are calculated. The Commission's proposal to use existing prescribed depreciation lives is flatly inconsistent with forward-looking costing and will understate the actual costs of providing universal service. A local usage element should not be included in the universal service definition because the necessary studies of local calling patterns are not available. Further, the Commission should use a time-series forecasting model when computing expenses associated with providing universal service.

In addition to the platform design criticisms detailed in GTE's prior pleadings, the Hatfield Model input values are not cost based and should not be used in the Commission's selected mechanism. In particular, Hatfield Model developers have used unexplained data adjustments and selective "data shopping" to ensure that their output results remain the same. These practices are not consistent with accepted cost modeling principles and should not be sanctioned by the Commission.

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GTE Service Corporation and its affiliated domestic telephone operating companies (collectively "GTE")[1] respectfully submit their Comments on the Further Notice of Proposed Rulemaking ("FNPRM") in the above-captioned proceedings.[2] In its prior filings, GTE has stressed that an auction mechanism is the most efficient way to allocate universal service funding. Until such a mechanism can be implemented, state-approved, carrier-specific engineering models are the most reliable method of determining the level of funding needed.[3]

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[1] GTE Alaska, Incorporated, GTE Arkansas Incorporated, GTE California Incorporated, GTE Florida Incorporated, GTE Hawaiian Telephone Company Incorporated, The Micronesian Telecommunications Corporation, GTE Midwest Incorporated, GTE North Incorporated, GTE Northwest Incorporated, GTE South Incorporated, GTE Southwest Incorporated, Contel of Minnesota, Inc., and Contel of the South, Inc.

[2] FCC 97-256 (rel. July 18, 1997).

[3] As explained in GTE's Phase III reply comments, if a carrier cannot obtain timely approval of an engineering model, it should be able to use company-specific inputs in the BCPM Model, modified to reflect the revisions suggested by GTE throughout this proceeding.

In this phase of the proceeding, the Commission has asked for comment on the input values that should be used in a cost proxy model. As explained below, trying to determine one set of input values for all firms in all areas of the United States which take into account all the necessary factors demonstrates the futility of using a cost proxy model to estimate universal service costs. In contrast, using carrier-specific inputs and engineering ensures that the individual characteristics of different companies and areas are considered. If the Commission does adopt a cost proxy model, it should ensure that as many input values as possible are: (1) user-adjustable, (2) clearly defined, (3) reflect the differences, such as terrain, climate, population density, and local regulations, among areas in the United States, and (4) produce an appropriate impact on the model's output. Many of the default input values advocated by proponents of the Hatfield Model should not be used because they systematically underestimate the costs of providing service. Although BCPM generally has more accurate algorithms and input values, a full evaluation cannot be done until the final version of the Model is made publicly available.[4]

I. THE INPUT VALUES OF THE HATFIELD MODEL ARE RESULT-ORIENTED AND FAIL TO REFLECT REAL-WORLD CONDITIONS.

Throughout the universal service proceedings, several new versions of the Hatfield Model have been released. With each revision, substantial changes have been

[4] Because both the Hatfield Model and BCPM are undergoing constant revision, it is difficult for interested parties to provide meaningful comment. Although GTE provides some input herein, it reserves the right to make additional comments when final versions of both BCPM and the Hatfield Model are completed and made available to the public.

made based on Commission and interested party criticism of the Model. Despite these significant changes, the final cost estimates produced by the Model have remained virtually the same. The Model developers have been able to maintain the same bottom line costs by introducing unexplained adjustments and utilization of unsupported input values.

A. The Hatfield Model developers continually introduce new changes which decrease costs but are unsupported by evidence or documentation.

Over the last eighteen months, the Hatfield Model developers have released five new Model versions and two "updates" to existing versions. According to Hatfield Model developer Dr. Robert Mercer, the Model has been improved by incorporating numerous changes suggested by regulators and other parties.[5] Modifications incorporated into the Model include changes in database, algorithm, and default input values. The Model's supporters claim that the change was warranted due to improved data or algorithm.[6] However, an examination of these "improvements" shows that other unexplained changes are used to assure that the Model's results remain the same.

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[5] Testimony of Dr. Robert Mercer, Washington Utilities and Transportation Commission, Docket Nos. UT-960369, 960370, 960371 at 348 (July 8, 1997).

[6] Post Hearing Brief of GTE Northwest Incorporated, Washington Utilities and transportation Commission, Docket Nos. UT-960369, 960370, 960371 at 19-20 (filed Sept. 12, 1997).

For example, the latest version of the Hatfield Model includes additional connecting cables and feeder cables.[7] These additional cables should have caused the total cost estimates produced by the Model to be relatively higher. Instead of producing higher estimates, the actual plant costs produced by the Model did not change because the simultaneously developers decreased the installed cost of copper for cables over 400 pairs by roughly 50 percent with no explanation or supporting evidence.[8] Such manipulation confirms that the Hatfield Model is designed to produce targeted results rather than to generate accurate cost estimates.

B. Hatfield Model "data shopping" practices consistently underestimate the costs of providing universal service.

The Hatfield Model developers use a "pick and choose" strategy for developing Model inputs, selecting only the data that support their desired results and ignoring data from the same source which contradict their low cost estimates. This strategy is illustrated by the Model's network operations cost assumptions. Version 4.0 of the Hatfield Model includes an assumption that on a forward-looking basis, an incumbent local exchange carrier ("ILEC") will incur only 50 percent of its present network operations costs. In establishing this assumption, the Model developers initially relied on a 1993 New Hampshire study as support. When GTE discovered that the New Hampshire study did not discuss this point, the Model developers instead relied on the

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[7] Letter to William F. Caton from Mike Lieberman (AT&T) Regarding Cost Model Criteria, CC Docket No. 96-45 (filed July 14, 1997) ("Cost Model Criteria Letter").

[8] Cost Model Criteria Letter, Attachment "Hatfield Inputs Portfolio 4.0," Section 2.3.2.

testimony of a Pacific Bell witness in a California Public Utility Commission proceeding which compared a Hatfield Model cost study with a Pacific Bell cost study.[9] This testimony showed that overall the Hatfield Model underestimated costs for Pacific Bell's operations by $1.3 million. However, because the two studies were structured differently, the Pacific Bell study did show lower costs than the Hatfield Model study in the network operations category.[10] Despite Pacific Bell explanations that a direct comparison of the two studies was misleading, the Hatfield Model developers incorporated only that one Pacific Bell estimate while ignoring all others, a violation of basic cost modeling principles.[11] Presented with Pacific Bell explanations, Dr. Robert Mercer, a Hatfield Model developer, now claims that this network operations cost reduction is based upon "expert opinion."[12] Ironically, although the source of the input value changed, the value itself remained the same in later Model versions.

The Hatfield Model also includes numerous other instances of data shopping practices:

- The Model developers use selected portions of comprehensive price quotations or only uses the lowest bid received. In the case of telephone

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[9] Testimony of R.L. Scholl, California Public Utilities Commission, Docket Nos. R.93-04-003, I.93-04-002 (Apr. 17, 1996).

[10] Direct Testimony of Gregory Duncan, Washington Utilities and Transportation Commission, Docket Nos. UT-960369, 960370, 960371, Attachment 1 at 51 (Mar. 27, 1997).

[11] Letter from Pacific Bell Telesis Group to William Caton, CC Docket No. 96-45 (filed May 1, 1997).

[12] Testimony of Dr. Robert Mercer, Washington Utilities and Transportation Commission, Docket Nos. UT-960369, 960370, 960371, at 389, 392 (July 8, 1997).

poles, the Model incorporates a labor estimate from one vendor and a material estimate from another to obtain a combined labor/material total cost that is far below the combined labor/material quotation of any one vendor.[13]

- The Model includes selected portions of industry studies. It relies upon a New Hampshire study to determine the Model's low switch maintenance factor, but rejects the same study's findings that drop lengths are much higher than those assumed in the Model.[14]

- The Model relies upon certain pole attachment agreements to support its assumption that poles are shared by telephone and power companies, but ignores the fact that those same agreements contradict the Model's estimated pole costs, sharing percentage assumptions, and assumption that a 40 foot pole is standard in the industry.[15]

- The Model rejects the construction standards detailed in AT&T's construction handbook.[16] For instance, even though the AT&T handbook states that feeder cable and power facilities should not be jointly trenched, the Hatfield Model assumes joint trenching. AT&T's handbook does allow joint trenching for distribution facilities. However, it requires minimum separation distances and expensive trenching practices that are not accounted for in the Model's cost estimates.[17]

This type of data "cherry picking" enables the Hatfield Model continually to produce estimates of costs which are significantly below the actual costs of installing and operating a telephone network. In fact, a review of Hatfield Model supporting materials demonstrates that the Hatfield Model developers systematically ignored

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[13] Public Version of the Rebuttal Testimony of Francis J. Murphy, Public Utilities Commission of the State of Hawaii, Docket No. 7702 (June 20, 1997).

[14] *Id.*

[15] *Id.*

[16] Testimony of Dean Fassett, Washington Utilities and Transportation Commission Docket Nos. UT-960369, 960370, 960371 at 757-761 (July 10, 1997).

[17] *Id.*

source data that reflected costs and prices that were higher than the values actually used in the model. For instance, in the Hatfield Model 3.1, the input value for total pole costs is approximately $417.[18] When the alleged source documentation for this value was reviewed, GTE discovered that the average total pole cost contained in the produced documentation was $ 522, not $417.[19] This example is just one of many instances where source documentation does not support inputs in the Hatfield Model and generally shows higher costs.

Hatfield Model proponents have defended these consistent deviations from their own empirical data by asserting that "expert opinion" also factors into their choice of input values.[20] However the expert opinion of the Model developers has led to the use of questionable data collection processes. In a recent order issued in New Mexico, the state commission stated that it "disagrees with the method used by the Hatfield team to collect data from outside plant contractors."[21] The New Mexico Commission described one of its many concerns as follows:

> The Commission agrees with GTE that the method used by the AT&T engineering (team) to collect data from vendors was flawed. A questionnaire was sent to vendors asking the cost of installing cable in different soil, bedrock and density

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[18] Hatfield Inputs Portfolio, Release 3.1, Section 2.4.1 (Feb. 28, 1997).

[19] Public Version of Rebuttal Testimony of Francis J. Murphy, Public Utilities Commission of the State of Hawaii, Docket No. 7702 at 20 (Aug. 28, 1997).

[20] Supplemental Testimony of Dean Fassett, Washington Utilities and Transportation Commission, Docket Nos. UT-960369, 960370, 960371 at 5 (June 20, 1997).

[21] New Mexico State Commission, Findings of Fact, Conclusions of Law and Order, Docket No. 97-35-TC at ¶ 56 (Sept. 19, 1997).

> conditions. The AT&T questionnaire did not define the terms used in the questionnaire. Therefore, one contractor's estimates could be higher than another due, for example, to a different perception of what constitutes rocky soil. Also, the contractors that responded to the questionnaire could have differing views as to what line or household density bands constitute rural, suburban or urban conditions. The different perception of soil conditions and density may account for some of the variation in the data supplied by vendors."[22]

This criticism highlights several problems which pervade the Hatfield Model's reliance on solicited information as support for the Model's default inputs. First, no evidence is presented to show that the contractors included in the study are reputable, reliable, capable, or even willing to perform work in any given state. For example, many of the price quotations relied on by the Hatfield Model proponents in New Mexico are from small, independent contractors that would be completely unable to provide the services and materials necessary to build the reconfigured network predicted by the Model.

Second, the Hatfield Model proponents have consistently used the lowest cost estimates received as support for the Model's default inputs rather than an average of all the bids received. Use of only the lowest bids leads to an understatement of actual costs since the lowest bidder may have misjudged actual costs or may have a lower bid because of lower quality workmanship and materials. Third, the Hatfield Model frequently combines the lowest bid for materials from one supplier with the lowest labor costs from another supplier in order to establish a "total" cost. Such practices ignore

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[22] *Id.*, ¶ 47.

the fact that the lowest price for materials may only be available if both labor and materials are purchased from the same vendor. Fourth, higher costs are incurred when dealing with multiple suppliers rather than only one or two vendors, a fact that the Hatfield Model fails to take into account. It is generally more efficient to deal with only a few vendors even if other vendors may sometimes have a lower bid for a particular project.

These problems show that the input values used in the Model would accurately represent the actual costs of materials and installation for a given network only by accident. Conversely, use of actual input data values in the mechanism chosen by the Commission will ensure that the costs of high-quality materials and installation (which differ by company and by area) are properly included in the costs of universal service.

II. A COST PROXY MODEL MUST ALLOW FOR INDIVIDUAL COMPANY INPUTS FOR PLANT MIX. (Section III.C.2.a)

In the FNPRM, the Commission asks for recommended changes to the Hatfield Model and BCPM input values and default assumptions, and requests comment on the input values needed to reflect accurately the impact of varying terrain conditions on cost.[23] As GTE explained in its prior comments, neither the Hatfield Model nor BCPM incorporates the terrain factors necessary to determine appropriate plant mix.[24] Omitting these factors leads to serious inaccuracies in plant mix calculations which,

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[23] FNPRM, ¶ 59.

[24] Comments of GTE Service Corporation, CC Docket Nos. 96-45, 97-160 at 2 (filed Sept. 24, 1997) ("GTE Comments (Sept. 24, 1997)").

despite recent changes to the Hatfield Model, have not improved These Models also fail to capture accurately the effect of population density, climate, and local ordinances on companies' network facilities selections.

In their Phase III reply comments, AT&T and MCI criticize Ameritech's view that there are significant factors beyond terrain and population density that affect plant mix. However, their only response to Ameritech's statements is that "[t]he LECs' embedded mix, because it represents decisions they have made over several years, does not represent the decisions that would be made today by a company that is providing the services that will receive universal service support."[25] Such statements are not only unsupported by logic, but sidestep the fact that the Hatfield Model ignores the numerous factors that affect plant mix.

Because of the large number of factors that must be considered in plant mix decisions, it is impossible to create an algorithm that includes all the necessary considerations affecting each ILEC. In contrast, company-specific cost studies are the most reliable method for determining accurate plant mix because they reflect both terrain and density factors, as well as the myriad of other factors considered by LECs in expanding and upgrading their networks. If the Commission nonetheless decides to use a cost proxy model, it should ensure that the selected mechanism allows carriers to vary input values for each area separately so that costs will be computed based on individual area characteristics. The largest area for which data should be adjustable is

[25] Reply Comments of AT&T Corp. and MCI Telecommunications Corporation, CC Docket Nos. 96-45, 97-160 at 3 (filed Oct. 3, 1997) ("AT&T/MCI Comments").

the state level. However, because input values can vary significantly within a state, a smaller area would allow more accuracy. Even among its own service areas, GTE has found vast differences in plant needs. Allowing individual input values, which can take such factors as climate and local ordinances into account, will increase the accuracy of the estimates produced by a cost proxy model.

III. ACTUAL INSTALLATION AND MATERIALS COST DATA MUST BE USED AS INPUTS IN A COST PROXY MODEL. (Section III.C.2.b)

The Commission asks for comment on the input values and mechanisms that should be used to compute the costs of materials and installation for network plant, and in particular on the Hatfield Model and BCPM values.[26] GTE concurs with the Commission's tentative conclusion that material and installation costs should be separately identified by both density and terrain type.[27] Because costs differ among and within states, carriers must be allowed to provide different inputs for the model based on the characteristics of different areas. Use of national averages for either labor or materials will only lead to an understatement of costs in some areas and overstatements in others. BCPM is much more compatible with this approach since it already allows input values to be adjusted by the user for areas small enough to reflect significant differences. GTE also agrees with the Commission's conclusion that the installation costs of feeder and distribution cable should be treated as identical.[28]

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[26] FNPRM, ¶¶ 68-69.

[27] FNPRM, ¶ 68.

[28] FNPRM, ¶ 69.

As explained in GTE's prior pleadings, the Hatfield Model uses an overly simplistic cost curve to estimate installation and material costs.[29] In addition, the Hatfield Model input values are in many instances based on flawed studies that do not substantiate the results used. In earlier state regulatory proceedings, GTE asked AT&T to produce the documentation that the Hatfield Model engineering team relied upon in establishing and validating the default values and engineering assumptions contained in Hatfield Model 3.1 so that GTE could test the reasonableness of these values. Upon review of the survey documentation and contrary to the claims of the Hatfield Model proponents, GTE discovered that the input values contained in the Hatfield Model were not in fact supported by the data and documents. As explained in Section I above, the data chosen were inevitably only the lowest bids and ignored crucial evidence that actual costs for materials and labor are higher than those used in the Model.[30]

IV. DROP LENGTHS AND COSTS MUST BE CALCULATED TAKING ALL RELEVANT FACTORS INTO ACCOUNT. (Section III.C.2.c)

As GTE has explained in its prior comments, drop distances should be calculated based on lot size, grid density and number of lines per geographic unit lot size, location of the living unit within the lot, and location of the demarcation point. Because of the many factors that must be taken into account and the vast differences between households, the methodology used by BCPM to estimate drop lengths (which

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[29] GTE Comments (Sept 24, 1997) at 4-5.

[30] As noted in Section I, use of the lowest bid is not always appropriate because contractors with markedly low bids often underestimate actual costs or provide lower quality work and materials.

at least considers lot size) produces more accurate results than the predetermined drop lengths included in the Hatfield Model, which uses line density zones that may be only tangentially related to lot size.[31]

A. The Hatfield Model input values for drop costs grossly underestimate actual costs.

The cost of drops used by the Hatfield Model exemplifies how the Model developers select their desired input values while ignoring the empirical data they have gathered that does not support the desired result. The Hatfield Model input values for drop wire distances, buried drop wire placement costs, and aerial drop placement costs are all significantly lower than are supported by industry evidence. A recent New Mexico state commission order found that, "[b]ased on evidence presented on this topic [drop costs], we are concerned about the cost per foot of drop wire as well as the length of the drop wires. The testimony indicates that many of the assumptions made by the Hatfield engineering team may result in too low of an estimate of the cost of an aerial drop."[32]

B. The Hatfield Model seriously underestimates drop length distances.

Review of the source documentation obtained relied on by the Hatfield Model proponents supports significantly longer drop lengths than those used as input values in

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[31] GTE Comments (Sept. 24, 1997) at 5-6.

[32] New Mexico State Commission, Findings of Fact, Conclusions of Law and Order, Docket No. 97-35-TC, ¶ 62 (Sept. 19, 1997).

the Model. The average drop length calculated from Hatfield Model 3.1 source data shows an average drop length of 194 feet for rural areas.[33] The Hatfield Model inexplicably uses an estimate of only 100 to 150 feet for rural areas.[34] For suburban areas, the average drop length calculated from the purported Hatfield Model 3.1 source material is 88 feet. Hatfield Model estimates are 38 feet shorter than this estimate. The same drop lengths are used in Hatfield Model 4.0.

As GTE explained in its Phase III reply comments, in order to make its drop lengths appear more reasonable, Hatfield Model supporters make unrealistic assumptions for the location of the interface and where the drop lengths will connect to buildings.[35] The Commission should ensure that it uses assumptions that reflect real-world conditions, including the fact that interfaces are frequently not at the closest possible point to each building and that drops usually connect to the side or back of a building, rather than the front. AT&T and MCI assert in their reply comments that the Hatfield Model's average drop length is only six feet lower than the nationwide average rather than the nine feet claimed by GTE.[36] The fact that AT&T and MCI acknowledge this inaccuracy should make the Commission wary of adopting their algorithm.

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[33] Public Version of the Rebuttal Testimony of Francis J. Murphy, Public Utilities Commission of the State of Hawaii, Docket No. 7702 at 17 (Aug. 28, 1997).

[34] Cost Model Criteria Letter, Attachment "Hatfield Inputs Portfolio 4.0," Section 2.2.2.

[35] Reply Comments of GTE Service Corporation, CC Docket Nos. 96-45, 97-160 at 7-9 (filed Oct. 3, 1997).

[36] AT&T/MCI Comments at 6.

C. The Hatfield Model estimate for buried drop wire placement does not give full consideration to higher bids and selectively chooses prices from within a bid package.

In the Hatfield Model 3.1, the input value for the placement cost of buried drop wire for the six lowest density zones was $.75 per foot. Hatfield Model 4.0 lowers this value to $.60. Indeed, when the source documentation supporting the Hatfield Model 3.1 value was examined, it became clear that the average value calculated from such documentation supports higher values. Had the average price from the Hatfield Model's own source documentation been used, the cost per foot would have been $1.06 per foot for rural placement and $1.56 per foot for suburban placement[37] – values significantly higher than are used even in Hatfield Model 4.0.

D. The Hatfield Model estimate of the costs for placement of aerial drops is based on understated time requirements.

The developers of the Model seriously underestimate the time that is necessary to install an aerial drop. In Hatfield Model 4.0, the time estimated to install an aerial drop ranges from 40 minutes for a rural drop to 20 minutes for suburban and urban drop.[38] This estimate is unreasonable because it assumes that technicians would be in the same neighborhood placing all drops at the same time. There is no travel time built into the cost estimate. In addition, it is assumed that these technicians will only be placing drops and thus will be paid a lower wage per hour than technicians who install

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[37] Public Version of the Rebuttal Testimony of Francis J. Murphy, Public Utilities Commission of the State of Hawaii, Docket No. 7702 at 10 (Aug. 28, 1997).

[38] Cost Model Criteria Letter, Attachment "Hatfield Inputs Portfolio 4.0," Section 2.2.2.

and splice cable. However, in the real world, drops are installed based on service order activity, and the technicians involved are usually responsible for placing and splicing cable as well. Therefore, the estimates included in the Hatfield Model underestimate the actual costs that would be incurred for installing aerial drops.

V. STRUCTURE SHARING INPUT VALUES SHOULD BE BASED ON ACTUAL CARRIER SHARING. (Section III.C.2.d)

In the FNPRM, the Commission asks for comment on the input values for sharing buried cable and other facilities.[39] The Commission also seeks comment on how regulatory changes will affect carriers' willingness to share in the future.[40] Because actual sharing will differ between areas and companies, input values for sharing should be based on actual sharing data on a per company basis.[41] However, if the Commission does use a cost proxy model, GTE agrees with the Commission's tentative conclusion that the installation and terrain conditions categories in the BCPM Model are more accurate than the Hatfield Model assumptions.[42]

The Commission tentatively concludes that 100 percent of the cost of cable that is buried using a plow should be assigned to the telephone company.[43] GTE generally supports this conclusion. Joint trenching for feeder and distribution cable is not

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[39] FNPRM, ¶¶ 80-81.

[40] FNPRM, ¶ 82.

[41] GTE Comments (Sept. 24, 1997) at 7.

[42] FNPRM, ¶ 79.

[43] FNPRM, ¶ 80.

common and is not consistent with good engineering practices. Actual sharing percentages vary and should be calculated on an area- and company-specific basis.

GTE opposes the Commission's tentative conclusion "that Sprint's suggested value of 66 percent is an acceptable aggregate default input value for the percent of costs assigned to the telephone company for all other shared facilities."[44] Aside from the fact that this estimate falls between the Hatfield Model and BCPM values, there is no documentation or evidence supporting the accuracy of a 66 percent sharing rate for all parts of the United States. As GTE and other commenters have shown, a single variable cannot properly take into account the differences in installation activities, terrain, and line density which affect sharing.[45] In addition, sharing is often not feasible in rural areas, and sharing itself produces coordination costs that must be taken into consideration.[46]

Recent regulatory changes will only have a small impact on carriers' willingness to share structures. First, most utilities are already subject to state regulations that encourage sharing to the maximum possible extent. Recent rule changes will therefore not have much effect. Second, increased sharing will only occur for newly installed network. Moving previously installed facilities to find new sharing opportunities would

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[44] FNPRM, ¶ 81.

[45] See Reply Comments of GTE Service Corporation, CC Docket Nos. 96-45, 97-160 at 10-11 (filed Oct. 3, 1997); Comments of Florida Public Service Commission, CC Docket Nos. 96-45, 97-160 at 7-9 (filed Sept. 24, 1997).

[46] Comments of Rural Utilities Service, CC Docket Nos. 96-45, 97-160 at 5-6 (filed Sept. 24, 1997).

be prohibitively expensive. Finally, the Commission should note that increased sharing will not necessarily result in reduced costs. Sharing could result in a larger structure being needed and a different location, leading to increased costs. The effect of sharing on total expenses can only be computed on a case-by-case basis so that these factors can be taken into account. When reviewing the universal service funding mechanism, the Commission can adjust the level of sharing to reflect any changes in the level and costs of sharing.

VI. ESTIMATES OF DIGITAL LOOP CARRIER ("DLC") COSTS MUST TAKE ALL RELATED COSTS INTO ACCOUNT. (Section III.C.2.e)

The Commission requests comment on how to calculate the forward-looking costs of DLCs and whether current proxy models' cost inputs and Sprint's proposed BCPM modifications are reasonable.[47] It is difficult for GTE to comment on the reasonableness of current models' inputs and proposed BCPM modifications because documentation for both the Hatfield and BCPM Models is insufficient, as noted by the Joint Board.[48] However, it is critical that any mechanism chosen by the Commission include all costs associated with DLCs. For example, both the Hatfield Model and BCPM exclude costs associated with precast concrete huts ("PCHs") and controlled environmental vaults ("CEVs") that are commonly used to house DLC terminals. In addition, the Hatfield Model seriously understates the costs associated with rights-of-

[47] FNPRM, ¶ 94.

[48] State Members' Second Report on the Use of Cost Proxy Models, CC Docket No. 96-45, Appendix A, Part 6 (Apr. 21, 1997).

way. The Model includes only $3000 per site for rights-of-way related costs. In reality, these costs can run as high as $40,000 to $60,000 in suburban areas up to $150,000 in urban areas.[49]

The mechanism chosen must also differentiate between material and labor costs. It should include a per-line cost based on channel unit additions. If the model is based on Next Generation Digital Loop Carrier ("NGDLC") technology, it must include all the costs associated with deploying the technology. Neither BCPM nor the Hatfield Model has demonstrated that all necessary costs have been included. Integrated DLC ("IDLC") is more cost-effective than universal DLC because one-half of the per-line channel unit and DLC multiplexer common costs are avoided by terminating the IDLC lines directly on the switch at the DS1. However, the unbundling of IDLC loops required by the Commission adds both costs and complexity that are not accounted for by either the Hatfield Model or BCPM. Other methods of unbundling also require the ILEC to incur additional costs that are not accounted for by the Hatfield Model. Demultiplexing IDLC loops for a hand-off at DS0 requires investment in DLC channel units and common cards, cross-wire, frame appearances for each line, and special arrangements for loop testing. "Hairpinning" IDLC loops requires switch hardware and software investment, as well as line units, cross-wire, and frame appearances for each line. An IDLC "line-level" hand-off requires grooming and additional terminal equipment at the central office, as well as special loop test configurations.

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[49] Rebuttal Testimony of C.R. Curbelo, New York State Public Service Commission, Docket Nos. 95-C-0657, 94-C-0095, 91-C-1174 at 7 (Oct. 14, 1996).